

**5021** (4) When agreement is reached regarding the working frequency or channel which the calling station shall use for its traffic, the station called shall indicate that it is ready to receive the traffic.

**5022** G. Indication of Traffic

**5023** § 28. When the calling station wishes to exchange more than one radiotelephone call, or to transmit one or more radiotelegrams, it should indicate this when contact is established with the station called.

**5024** H. Difficulties in Reception

**5025** § 29. (1) If the station called is unable to accept traffic immediately, it should reply to the call as indicated in No. 4982 followed by "Wait . . . minutes" (or AS spoken as ALFA SIERRA . . . (minutes) in case of language difficulties), indicating the probable duration of waiting time in minutes. If the probable duration exceeds ten minutes the reason for the delay shall be given. Alternatively the station called may indicate, by any appropriate means, that it is not ready to receive traffic immediately.

**5026** (2) When a station receives a call without being certain that such a call is intended for it, it shall not reply until the call has been repeated and understood.

**5027** (3) When a station receives a call which is intended for it, but is uncertain of the identification of the calling station, it shall reply immediately asking for a repetition of the call sign or other identification of the calling station.

**Section V. Forwarding (Routing) of Traffic**

**5028** A. Traffic Frequency

**5029** § 30. (1) Every station should transmit its traffic (radiotelephone calls or radiotelegrams) on one of its working frequencies in the band in which the call has been made.

**5030** (2) In addition to its normal working frequency, printed in heavy type in the List of Coast Stations, a coast station may use one or more supplementary frequencies in the same band, in accordance with the provisions of Article 60.

**5031** (3) The use of frequencies reserved for calling shall be forbidden for traffic, except distress traffic (see Appendix T3 [Chapter IX]).

**5032** (4) After contact has been established on the frequency to be used for traffic, the transmission of a radiotelegram or radiotelephone call shall be preceded by:

**5033** – the call sign or other identification of the station called;

- 5034                   – the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the calling station.

5036                   (5) The call sign or other identification need not be sent more than once.

5037                   B. Establishment of Radiotelephone Calls  
                            and Transmission of Radiotelegrams

5038                   B1. Establishment of Radiotelephone Calls

5039                   § 31. (1) In setting up a radiotelephone call, the coast station should establish connection with the telephone network as quickly as possible. In the meantime, the ship station shall maintain watch on the appropriate working frequency as indicated by the coast station.

5040                   (2) However, if the connection cannot be quickly established, the coast station shall inform the ship station accordingly. The latter station shall then either:

5041                   a) maintain watch on the appropriate frequency until an effective circuit can be established; or

5042                   b) contact the coast station later at a mutually agreed time.

5043                   (3) When a radiotelephone call has been completed, the procedure indicated in No. 5054 shall be applied unless further calls are on hand at either station.

5044                   B2. Transmission of Radiotelegrams

5045                   § 32. (1) The transmission of a radiotelegram should be made as follows:

- radiotelegram begins: from . . . (name of ship or aircraft);
- number . . . (serial number of radiotelegram);
- number of words . . . ;
- date . . . ;
- time . . . (time radiotelegram was handed in aboard ship or aircraft);
- service indicators (if any);
- address . . . ;
- text . . . ;
- signature . . . (if any);
- radiotelegram ends, over.

- 5046 (2) As a general rule, radiotelegrams of all kinds transmitted by ship stations shall be numbered in a daily series; number 1 shall be given to the first radiotelegram sent each day to each separate station.
- 5047 (3) A series of numbers which has begun in radiotelegraphy should be continued in radiotelephony and vice versa.
- 5048 (4) Each radiotelegram should be transmitted once only by the sending station. However, it may, when necessary, be repeated in full or in part by the receiving or the sending station.
- 5049 (5) In transmitting groups of figures, each figure shall be spoken separately and the transmission of each group or series of groups shall be preceded by the words "in figures".
- 5050 (6) Numbers written in letters shall be spoken as they are written, their transmission being preceded by the words "in letters".

5051 B3. Acknowledgement of Receipt

- 5052 § 33. (1) The acknowledgement of receipt of a radiotelegram or a series of radiotelegrams shall be given by the receiving station in the following manner:
- the call sign or other identification of the sending station;
  - the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
  - the call sign or other identification of the receiving station;
  - "Your No. . . . received, over" (or R spoken as ROMEO . . . (number), K spoken as KILO in case of language difficulties); or
  - "Your No. . . . to No. . . . received, over" (or R spoken as ROMEO . . . (numbers), K spoken as KILO in case of language difficulties).

5053 (2) The radiotelegram, or series of radiotelegrams, shall not be considered as cleared until this acknowledgement has been received.

5054 (3) The end of work between two stations shall be indicated by each of them by means of the word "Out" (or  $\overline{VA}$  spoken as VICTOR ALFA in case of language difficulties).

**Section VI. Duration and Control of Working**

5056 (2) In communications between coast stations and ship stations, the ship station shall comply with the instructions given by the coast station in all questions relating to the order and time of transmission, to the choice of frequency, and to the duration and suspension of work.

5057 (3) In communications between ship stations, the station called controls the working in the manner indicated in No. 5056. However, if a coast station finds it necessary to intervene, the ship stations shall comply with the instructions given by the coast station.

ANNEX 65B

**Digital Selective Calling Procedures**

**(Note by VGE - Text to be transferred to an ITU-R Recommendation.  
This Annex should be handled together with Annex 62B.)**

**Mob-87**

**Section VIII. Calling, Acknowledgement of Calls, and  
Subsequent Exchange of Traffic when Using Digital  
Selective Calling Techniques**

**5062  
Mob-87**

**A. Method of Calling and Frequencies  
to be Used for Calling**

**5063  
Mob-87**

§ 37. (1) Calling by digital selective calling techniques shall be carried out in accordance with the provisions of Nos. 4686A to 4686H.

**5064  
Mob-87**

(2) An appropriate digital selective calling channel chosen in accordance with the provisions of Nos. 4323S to 4323AB or Nos. 4323AJ to 4323AR, as appropriate, shall be used for the call.

**5065  
Mob-87**

**B. Acknowledgement of Calls and Agreement  
on the Frequency to be Used for Traffic**

**5066  
Mob-87**

§ 38. (1) Acknowledgement of a received digital selective call and the exchange of information concerning the frequency to be used for traffic should be carried out in accordance with the provisions of Nos. 4687A to 4688H.

**5067  
Mob-87**

(2) When agreement regarding the working frequency or channel to be used for the exchange of traffic has been reached in accordance with the provisions of Nos. 4687A to 4688H, the two stations then transfer to the working frequency or channel agreed for the exchange of traffic.

**5068  
Mob-87**

**C. Forwarding of Traffic and  
Control of Working**

**5069  
Mob-87**

§ 39. The forwarding of traffic and the control of working shall be carried out in accordance with the provisions of Nos. 5028 to 5054, No. 5056 and No. 5057.

**PART BANNEX AP 6**

**Determination of Necessary Bandwidths Including Examples  
for their Calculation and Associated Examples  
for the Designation of Emissions**

**(Note by VGE - Text to be transferred to an ITU-R Recommendation.)**

**§ 1.** ~~However, the~~ **The necessary bandwidth so determined is not the only characteristic of an emission to be considered in evaluating the interference that may be caused by that emission.**

**§ 2.** In the formulation of the table, the following terms have been employed:

- $B_n$  = Necessary bandwidth in hertz**
- $B$  = Modulation rate in bauds**
- $N$  = Maximum possible number of black plus white elements to be transmitted per second, in facsimile**
- $M$  = Maximum modulation frequency in hertz**
- $C$  = Sub-carrier frequency in hertz**
- $D$  = Peak deviation, i.e., half the difference between the maximum and minimum values of the instantaneous frequency. The instantaneous frequency in hertz is the time rate of change in phase in radians divided by  $2\pi$**
- $t$  = Pulse duration in seconds at half-amplitude**
- $t_r$  = Pulse rise time in seconds between 10% and 90% amplitude**
- $K$  = An overall numerical factor which varies according to the emission and which depends upon the allowable signal distortion**
- $N_c$  = Number of baseband channels in radio systems employing multi-channel multiplexing**
- $f_p$  = Continuity pilot sub-carrier frequency (Hz) (continuous signal utilized to verify performance of frequency-division multiplex systems).**

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
I. NO MODULATING SIGNAL			
Continuous wave emission	—	—	NONE
II. AMPLITUDE MODULATION			
1. Signal with Quantized or Digital Information			
Continuous wave telegraphy, Morse code	$B_n = BK$ $K = 5$ for fading circuits $K = 3$ for non-fading circuits	25 words per minute $B = 20, K = 5$ Bandwidth: 100 Hz	100HA1AAN
Telegraphy by on-off keying of a tone modulated carrier, Morse code	$B_n = BK + 2M$ $K = 5$ for fading circuits $K = 3$ for non-fading circuits	25 words per minute $B = 20, M = 1\ 000, K = 5$ Bandwidth: $2\ 100\ \text{Hz} = 2.1\ \text{kHz}$	2K10A2AAN
Selective calling signal using sequential single frequency code, single-sideband full carrier	$B_n = M$	Maximum code frequency is: $2\ 110\ \text{Hz}$ $M = 2\ 110$ Bandwidth: $2\ 110\ \text{Hz} = 2.11\ \text{kHz}$	2K11H2BFN
Direct-printing telegraphy using a frequency shifted modulating sub-carrier, with error-correction, single-sideband, suppressed carrier (single channel)	$B_n = 2M + 2DK$ $M = \frac{B}{2}$	$B = 50$ $D = 35\ \text{Hz}$ (70 Hz shift) $K = 1.2$ Bandwidth: 134 Hz	134HJ2BCN
Telegraphy, multi-channel with voice frequency, error-correction, some channels are time-division multiplexed, single-sideband, reduced carrier	$B_n = \text{highest central frequency} + M + DK$ $M = \frac{B}{2}$	15 channels; highest central frequency is: $2\ 805\ \text{Hz}$ $B = 100$ $D = 42.5\ \text{Hz}$ (85 Hz shift) $K = 0.7$ Bandwidth: $2\ 885\ \text{Hz} = 2.885\ \text{kHz}$	2K89R7BCW

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
2. Telephony (Commercial Quality)			
Telephony, double-sideband (single channel)	$B_n = 2M$	$M = 3\ 000$ Bandwidth: 6 000 Hz = 6 kHz	6K00A3EJN
Telephony, single-sideband, full carrier (single channel)	$B_n = M$	$M = 3\ 000$ Bandwidth: 3 000 Hz = 3 kHz	3K00H3EJN
Telephony, single-sideband, suppressed carrier (single channel)	$B_n = M - \text{lowest modulation frequency}$	$M = 3\ 000$ lowest modulation frequency is 300 Hz Bandwidth: 2 700 Hz = 2.7 kHz	2K70J3EJN
Telephony with separate frequency modulated signal to control the level of demodulated speech signal, single-sideband, reduced carrier (Lincompex) (single channel)	$B_n = M$	Maximum control frequency is 2 990 Hz $M = 2\ 990$ Bandwidth: 2 990 Hz = 2.99 kHz	2K99R3ELN
Telephony with privacy, single-sideband, suppressed carrier (two or more channels)	$B_n = N_c M - \text{lowest modulation frequency in the lowest channel}$	$N_c = 2$ $M = 3\ 000$ lowest modulation frequency is 250 Hz Bandwidth: 5 750 Hz = 5.75 kHz	5K75J8EKF
Telephony, independent sideband (two or more channels)	$B_n = \text{sum of } M \text{ for each sideband}$	2 channels $M = 3\ 000$ Bandwidth: 6 000 Hz = 6 kHz	6K00B8EJN
3. Sound Broadcasting			
Sound broadcasting, double-sideband	$B_n = 2M$ $M$ may vary between 4 000 and 10 000 depending on the quality desired	Speech and music $M = 4\ 000$ Bandwidth: 8 000 Hz = 8 kHz	8K00A3EGN

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
Sound broadcasting, single-sideband, reduced carrier (single channel)	$B_n = M$ $M$ may vary between 4 000 and 10 000 depending on the quality desired	Speech and music $M = 4\ 000$ Bandwidth: 4 000 Hz = 4 kHz	4K00R3EGN
Sound broadcasting, single-sideband, suppressed carrier	$B_n = M - \text{lowest modulation frequency}$	Speech and music $M = 4\ 500$ lowest modulation frequency = 50 Hz; Bandwidth: 4 450 Hz = 4.45 kHz	4K45J3EGN
4. Television			
Television, vision and sound	Refer to relevant CCIR documents for the bandwidths of the commonly used television systems	Number of lines = 625 Nominal video bandwidth: 5 MHz Sound carrier relative to video carrier = 5.5 MHz Total vision bandwidth: 6.25 MHz FM sound bandwidth including guardbands: 750 kHz RF channel bandwidth: 7 MHz	6M25C3F – 750KF3EGN
5. Facsimile			
Analogue facsimile by sub-carrier frequency modulation of a single-sideband emission with reduced carrier, monochrome	$B_n = C + \frac{N}{2} + DK$ $K = 1.1$ (typically)	$N = 1\ 100$ corresponding to an index of cooperation of 352 and a cyclo rotation speed of 60 rpm. Index of cooperation is the product of the drum diameter and number of lines per unit length. $C = 1\ 900$ $D = 400$ Hz Bandwidth: 2 890 Hz = 2.89 kHz	2K89R3CMN



Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
Analogue facsimile; frequency modulation of an audio frequency sub-carrier which modulates the main carrier, single-sideband suppressed carrier	$B_n = 2M + 2DK$ $M = \frac{N}{2}$ $K = 1.1$ (typically)	$N = 1\ 100$ $D = 400\text{ Hz}$ Bandwidth: $1\ 980\text{ Hz} = 1.98\text{ kHz}$	1K98J3C --
6. Composite Emissions			
Double-sideband, television relay	$B_n = 2C + 2M + 2D$	Video limited to 5 MHz, audio on 6.5 MHz, frequency modulated sub-carrier, sub-carrier deviation = 50 kHz: $C = 6.5 \times 10^6$ $D = 50 \times 10^3\text{ Hz}$ $M = 15\ 000$ Bandwidth: $13.13 \times 10^6\text{ Hz}$ $= 13.13\text{ MHz}$	13M1A8W --
Double-sideband radio-relay system, frequency division multiplex	$B_n = 2M$	10 voice channels occupying baseband between 1 kHz and 164 kHz $M = 164\ 000$ Bandwidth: $328\ 000\text{ Hz} = 328\text{ kHz}$	328KA8E --
Double-sideband emission of VOR with voice (VOR = VHF omnidirectional radio range)	$B_n = 2C_{max} + 2M + 2DK$ $K = 1$ (typically)	The main carrier is modulated by: - a 30 Hz sub-carrier - a carrier resulting from a 9 960 Hz tone frequency modulated by a 30 Hz tone - a telephone channel - a 1 020 Hz keyed tone for continual Morse identification $C_{max} = 9\ 960$ $M = 30$ $D = 480\text{ Hz}$ Bandwidth: $20\ 940\text{ Hz} = 20.94\text{ kHz}$	20K9A9WWF

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
Independent sidebands; several telegraph channels with error-correction together with several telephone channels with privacy; frequency division multiplex	$B_n = \text{sum of } M \text{ for each sideband}$	Normally composite systems are operated in accordance with standardized channel arrangements (e.g. [CCIR Rec. 348-2]). 3 telephone channels and 15 telegraphy channels require the bandwidth 12 000 Hz = 12 kHz	12K0B9WWF
III-A. FREQUENCY MODULATION			
1. Signal with Quantized or Digital Information			
Telegraphy without error-correction (single channel)	$B_n = 2M + 2DK$ $M = \frac{B}{2}$ $K = 1.2$ (typically)	$B = 100$ $D = 85 \text{ Hz}$ (170 Hz shift) Bandwidth: 304 Hz	304HF1BBN
Telegraphy, narrow-band direct-printing with error-correction (single channel)	$B_n = 2M + 2DK$ $M = \frac{B}{2}$ $K = 1.2$ (typically)	$B = 100$ $D = 85 \text{ Hz}$ (170 Hz shift) Bandwidth: 304 Hz	304HF1BCN
Selective calling signal	$B_n = 2M + 2DK$ $M = \frac{B}{2}$ $K = 1.2$ (typically)	$B = 100$ $D = 85 \text{ Hz}$ (170 Hz shift) Bandwidth: 304 Hz	304HF1BCN
Four-frequency duplex telegraphy	$B_n = 2M + 2DK$ $B = \text{Modulation rate in bauds of the faster channel. If the channels are synchronized:}$ $M = \frac{B}{2}$ (otherwise $M = 2B$ ) $K = 1.1$ (typically)	Spacing between adjacent frequencies = 400 Hz; Synchronized channels $B = 100$ $M = 50$ $D = 600 \text{ Hz}$ Bandwidth: 1 420 Hz = 1.42 kHz	1K42F7BDX

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
2. Telephony (Commercial Quality)			
Commercial telephony	$B_n = 2M + 2DK$ $K = 1$ (typically, but under certain conditions a higher value may be necessary)	For an average case of commercial telephony, $D = 5\,000\text{ Hz}$ $M = 3\,000$ Bandwidth: $16\,000\text{ Hz} = 16\text{ kHz}$	16K0F3EJN
3. Sound Broadcasting			
Sound broadcasting	$B_n = 2M + 2DK$ $K = 1$ (typically)	Monaural $D = 75\,000\text{ Hz}$ $M = 15\,000$ Bandwidth: $180\,000\text{ Hz} = 180\text{ kHz}$	180KF3EGN
4. Facsimile			
Facsimile by direct frequency modulation of the carrier; black and white	$B_n = 2M + 2DK$ $M = \frac{N}{2}$ $K = 1.1$ (typically)	$N = 1\,100$ elements/sec; $D = 400\text{ Hz}$ Bandwidth: $1\,980\text{ Hz} = 1.98\text{ kHz}$	1K98F1C –
Analogue facsimile	$B_n = 2M + 2DK$ $M = \frac{N}{2}$ $K = 1.1$ (typically)	$N = 1\,100$ elements/sec; $D = 400\text{ Hz}$ Bandwidth: $1\,980\text{ Hz} = 1.98\text{ kHz}$	1K98F3C –
5. Composite Emissions (see Table III-B)			
Radio-relay system, frequency division multiplex	$B_n = 2f_p + 2DK$ $K = 1$ (typically)	60 telephone channels occupying baseband between 60 kHz and 300 kHz; rms per-channel deviation: 200 kHz; continuity pilot at 331 kHz produces 100 kHz rms deviation of main carrier. $D = 200 \times 10^3 \times 3.76 \times 2.02 = 1.52 \times 10^6\text{ Hz}$ $f_p = 0.331 \times 10^6\text{ Hz}$ Bandwidth: $3.702 \times 10^6\text{ Hz}$ $= 3.702\text{ MHz}$	3M70F8EJF

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
Radio-relay system, frequency division multiplex	$B_n = 2M + 2DK$ $K = 1$ (typically)	960 telephone channels occupying baseband between 60 kHz and 4 028 kHz; rms per-channel deviation: 200 kHz; continuity pilot at 4 715 kHz produces 140 kHz rms deviation of main carrier. $D = 200 \times 10^3 \times 3.76 \times 5.5 = 4.13 \times 10^6$ Hz $M = 4.028 \times 10^6$ $f_p = 4.715 \times 10^6$ $(2M + 2DK) > 2 f_p$ Bandwidth: $16.32 \times 10^6$ Hz = 16.32 MHz	16M3F8EJF
Radio-relay system, frequency division multiplex	$B_n = 2f_p$	600 telephone channels occupying baseband between 60 kHz and 2 540 kHz; rms per-channel deviation: 200 kHz; continuity pilot at 8 500 kHz produces 140 kHz rms deviation of main carrier. $D = 200 \times 10^3 \times 3.76 \times 4.36 = 3.28 \times 10^6$ Hz $M = 2.54 \times 10^6$ $K = 1$ $f_p = 8.5 \times 10^6$ $(2M + 2DK) < 2 f_p$ Bandwidth: $17 \times 10^6$ Hz = 17 MHz	17M0F8EJF
Stereophonic sound broadcasting with multiplexed subsidiary telephony sub-carrier	$B_n = 2M + 2DK$ $K = 1$ (typically)	Pilot tone system $M = 75\ 000$ $D = 75\ 000$ Hz Bandwidth: 300 000 Hz = 300 kHz	300KF8EHF

III-B. MULTIPLYING FACTORS FOR USE IN COMPUTING $D$ , PEAK FREQUENCY DEVIATION, IN FM FREQUENCY DIVISION MULTIPLEX (FM/FDM) MULTI-CHANNEL EMISSIONS		
For FM/FDM systems the necessary band width is :		
$B_n = 2M + 2DK$		
The value of $D$ , or peak frequency deviation, in these formulae for $B_n$ is calculated by multiplying the rms value of per-channel deviation by the appropriate "Multiplying factor" shown below.		
In the case where a continuity pilot of frequency $f_p$ exists above the maximum modulation frequency $M$ , the general formula becomes:		
$B_n = 2f_p + 2DK$		
In the case where the modulation index of the main carrier produced by the pilot is less than 0.25, and the rms frequency deviation of the main carrier produced by the pilot is less than or equal to 70% of the rms value of per-channel deviation, the general formula becomes either		
$B_n = 2f_p$ or $B_n = 2M + 2DK$		
whichever is greater.		
Number of telephone channels $N_c$	Multiplying factor <sup>46</sup>	
	(peak factor) × antilog	$\left[ \frac{\text{value in dB above modulation reference level}}{20} \right]$
$3 < N_c < 12$	$4.47 \times \text{antilog}$	$\left[ \frac{\text{a value in dB specified by the equipment manufacturer or station licensee, subject to administration approval}}{20} \right]$
$12 \leq N_c < 60$	$3.76 \times \text{antilog}$	$\left[ \frac{2.6 + 2 \log N_c}{20} \right]$
Number of telephone channels $N_c$	Multiplying factor <sup>47</sup>	
	(peak factor) × antilog	$\left[ \frac{\text{value in dB above modulation reference level}}{20} \right]$
$60 \leq N_c < 240$	$3.76 \times \text{antilog}$	$\left[ \frac{-1 + 4 \log N_c}{20} \right]$
$N_c \geq 240$	$3.76 \times \text{antilog}$	$\left[ \frac{-15 + 10 \log N_c}{20} \right]$

<sup>46</sup> In the above chart, the multipliers 3.76 and 4.47 correspond to peak factors of 11.5 dB and 13.0 dB, respectively.

<sup>47</sup> In the above chart, the multiplier 3.76 corresponds to a peak factor of 11.5 dB.

Description of Emission	Necessary Bandwidth		Designation of Emission
	Formula	Sample Calculation	
IV. PULSE MODULATION			
1. Radar			
Unmodulated pulse emission	$B_n = \frac{2K}{t}$ $K$ depends upon the ratio of pulse duration to pulse rise time. Its value usually falls between 1 and 10 and in many cases it does not need to exceed 6	Primary Radar Range resolution: 150 m $K = 1.5$ (triangular pulse where $t \approx t_r$ , only components down to 27 dB from the strongest are considered)  Then: $t = \frac{2 \times (\text{range resolution})}{\text{velocity of light}}$  $= \frac{2 \times 150}{3 \times 10^8}$  $= 1 \times 10^{-6}$ seconds Bandwidth: $3 \times 10^6 \text{ Hz} = 3 \text{ MHz}$	3M00P0NAN
2. Composite Emissions			
Radio-relay system	$B_n = \frac{2K}{t}$ $K = 1.6$	Pulse position modulated by 36 voice channel baseband; pulse width at half amplitude = 0.4 $\mu\text{s}$ Bandwidth: $8 \times 10^6 \text{ Hz} = 8 \text{ MHz}$ (Bandwidth independent of the number of voice channels)	8M00M7EJT

**(Note by VGE - The following texts which are to be transferred to  
ITU-R Recommendations are not reproduced here.)**

Annex AP 7	(Present Appendix 7)
Annex AP 8	(Present Appendix 8)
Annex AP 12	(Present Appendix 12)
Annex AP 13	(Present Appendix 13)
Annex AP 14	(Present Appendix 14)
Annex AP 15	(Present Appendix 15)
Annex AP 17	(Present Appendix 17)
Annex AP 19	(Present Appendix 19)
Annex AP 20	(Present Appendix 20)
Annex AP 21	(Present Appendix 21)
Annex AP 36	(Present Appendix 36)
Annex AP 37	(Present Appendix 37)
Annex AP 37A	(Present Appendix 37A)
Annex AP 38	(Present Appendix 38)
Annex AP 39	(Present Appendix 39)
Annex AP 41	(Present Appendix 41)

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INTERNATIONAL TELECOMMUNICATION UNION

# RADIOCOMMUNICATION ADVISORY GROUP

GENEVA, 12-16 APRIL 1994

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

FIRST MEETING OF THE RADIOCOMMUNICATION ADVISORY GROUP

RECEIVED

Geneva, 12-15 April 1994

MAY 5 1994

## SUMMARY OF CONCLUSIONS

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Following the adoption of the agenda (Document RAG94/1) as modified (item 7.6 merged with item 6.4) the Radiocommunication Advisory Group (RAG) reached the following conclusions:

1 Noting Document RAG94/3 on working methods the RAG will, when required, determine its chairman and vice-chairmen. In this process it will be guided by the procedures for election of Study Group chairmen and vice-chairmen. Documents for consideration by RAG should be disseminated as early as possible. The principles for document handling outlined in section 8 of Resolution R1 should be applied to the extent possible. Electronic document handling is encouraged, but the prevailing resource limitations at certain places must be taken into account.

The chairman is entitled, in consultation with the vice-chairmen, to adapt the working methods between RAG meetings when required. The RAG accepts the principle of appointment of rapporteurs for specific tasks. Those would also be able to continue studies between RAG meetings. The following rapporteurs were appointed for the subjects indicated:

- |    |   |                            |
|----|---|----------------------------|
| A. | Working Methods   | Mr. T. Boe (Norway)        |
| B. | Work Programme and Study Group Structure                  | Mr. E. Hauck (Switzerland) |
| C. | Coordination and Cooperation with the other Sectors, etc. | Mr. B. Gracie (Canada)     |
| D. | Strategic Planning for the Radiocommunication Sector      | Mr. R. Parlow (USA)        |



2 In reviewing the Draft Strategic Plan 1995-99, as developed by the Council Working Group on Strategic Policies and Plans in its Document 24, the RAG concluded that the material in Part III A of that document should be revised and it advised the Director to present the modified version of that section to Council 1994 for consideration, together with relevant remarks as outlined in Annex 1. Without entering into a detailed review of section 2 of Document RAG94/4, the RAG provided several comments on the contents of that section, which the Director will take into account in a future revision of that material.

3 Following the consideration of documents 6, 14, 30 and CVC-4/11 page 5 relating to Study Group chairmanships and Resolution ITU-R 15 dealing with the maximum term of office for Study Group chairmen, opinions in the meeting converged on a provisional basis as follows:

- candidates for the post(s) of Study Group chairmen and vice-chairmen should be identified, by Administrations, as soon as possible once the Study Group structure is clear;
- nominations for the posts of Study Group chairmen and vice-chairmen should be accompanied by a biographical profile highlighting the qualifications of the individual(s) proposed; the profiles to be circulated to the Heads of delegation to the Assembly by the Director;
- the maximum term of office for both chairmen and vice-chairmen should be limited to an 8 year period, in accordance with Resolution ITU-R 15, noting that the period in office in one appointment (e.g. as a vice-chairman) does not count towards the period in office for another appointment (e.g. as a chairman) and that steps should be taken to provide some continuity between chairmen and vice-chairmen;
- due account should be taken of the wider membership (m, M) of the Sector.

The RAG meeting will review its provisional views at its next meeting.

4 Considering Document RAG94/10 it was concluded that the guideline for maintenance of Recommendations, for which no current Question exists, should follow the procedure outlined in Annex 2. The use of prefixes in the numbering of Recommendations (Document RAG94/19) was considered mandatory for the Radiocommunication Bureau in line with Resolution R1, but individuals would be free to use or not to use the prefix as the number of the Recommendation is unique and this would always allow the correct attribution by the Radiocommunication Bureau.

Numbering of the Study Groups in an unambiguous way was proposed (Document RAG94/26) for the three Sectors, through a letter R, T or D preceding the Study Group number as appropriate, and this document was submitted to the Joint Meeting RAG/TSAG.

5 On the question of how the "association" of the Radiocommunication Assembly with the WRC would be achieved (Documents RAG94/5 and 17) the RAG advised that the 1995 Assembly should precede the WRC and that there should be no overlap. This advice is given for 1995 only in view of the special responsibility of the Conference to consider the VGE Report and results of related activities in the Study Groups. The arrangement for future years would need to be re discussed.

It was found premature to discuss an organizational structure for WRC-95 (Document RAG94/8) at this meeting. Therefore, RAG will revert to this matter at its next meeting. It was underlined that any discussion in RAG would not pre-empt the consultation to be arranged by the Secretary General.

6 Publication of Recommendations in comprehensive volumes should occur at regular four year intervals as specified in Resolution R1. The first such publication should be effected as soon as possible after the approval procedure is completed in 1994 and then after every alternate Assembly. Recommendations approved by correspondence in 1994 can be directly incorporated into the respective volume and do not need to be published in fascicle. New or revised

Recommendations that come into force between the comprehensive publication are to be published, grouped together as appropriate, as soon as possible, in the final agreed form in the most economical way. The scope of fascicles should be determined by Study Group chairmen and the Director (Document RAG94/11 and 23). The need for enhanced marketing of ITU-R texts was underlined.

7 The publication schedule of reports will be reassessed in 1995. While the number of existing reports is decreasing rapidly and new reports will not be very numerous, the means of special publications in accordance with Resolution R13 could also be used. The RAG endorsed the measures suggested by the Study Group chairmen/vice-chairmen (see paragraph 4 of Document CVC-4/10). Particular emphasis was put on the need for the early availability of reliable indexes. The Study Group chairmen/vice-chairman are invited to provide the categorization of existing reports as outlined in paragraph 4.2 of Document CVC-4/10 for the next RAG meeting.

8 The use of CD-ROM technology for the publication and dissemination of ITU-R Recommendations was endorsed. Only the authoritative uneditable version should be used for wide distribution, while for some the legitimate need for revisable text was acknowledged. An inquiry of demand and requirements concerning all ITU-R publications was recommended to determine required improvements. All possible means should be exploited to make all publications more rapidly available at lower costs. However, costs shall not prevent publication. The comments on handbooks in Document RAG94/11 were noted as well as the fact that appropriate action is under way. The proposal in Document RAG94/18 is covered by CS172.

9 In noting the Patent Policy used in ITU-T (Document RAG94/21) the RAG expressed its support for that policy statement which could lead to a single consistent approach in both Sectors. The matter was also considered at the Joint Meeting which endorsed the proposal and agreed the need for coordination on any proposed changes to the Patent Policy.

10 The future of ITU-R Task Group 4/3 (VSATs) was considered (Documents RAG94/24 and 28) noting that the subject matter had subsequently been referred to ITU-T. The RAG concluded that once outstanding work on two Recommendations had been completed, these would be transferred to the T-Sector which would also maintain them, together with any outstanding Task Group 4/3 activities. Task Group 4/3 could then be dissolved at an appropriate point in time. ITU-R Study Group 4 has practically completed a handbook on VSATs and will provide a method to reference the transferred texts.

11 The liaison statements exchanged between ITU-T Study Group 4 and ITU-R Study Group 9 were noted (Document RAG94/22).

12 Noting the report from the Chairman of the ICG on Satellite Matters (Document RAG94/20), emphasis was put on the usefulness of designating a "lead" Study Group for a specific subject (such as ITU-R Study Group 4 on Satellite Matters) and the importance of the presence of key players in the ICG. The designation of Study Group rapporteurs (in particular from Study Groups 10 and 11) was endorsed.

13 The RAG endorsed in general the need for liaison and collaboration between ITU-R and ITU-T on strategy matters (Document RAG94/27). It was underlined that no rigid division of activities should be imposed and that sufficient time for consolidation was required. On the other hand the process of reform should not be curtailed. Reference was made to Resolution 2 of the Additional Plenipotentiary Conference, 1992, which provides for ongoing review.

14 The date for the next meeting of the RAG was considered (Document RAG94/15) and after consultation with TSAG it was concluded that RAG would meet for the second time on 23-27 January 1995.

15 The report on activities related to the VGE and the development of Rules of Procedure (Document RAG94/9) was noted. The need for work, in particular of Study Group 8, on texts to be transferred from the Radio Regulations to ITU-R Recommendations was acknowledged (RAG94/16), as well as its importance for the good preparation of the WRC-95. While that conference still has to decide on the VGE proposals, relevant work in the study groups should commence, pursued as far as possible in preparation for WRC-95. The Radiocommunication Bureau is expected to provide the basic material as input to the respective study groups.

16 The matter of the future of Study Groups 10 and 11 was raised (Document RAG94/25) and divergent views were expressed. The RAG encouraged the established Steering Group of Study Groups 10 and 11 to continue to study the matter and invited it to provide a report to the next RAG meeting.

17 Information on the outcome of the WTDC, Buenos Aires, was noted (Document RAG94/7 + Add.1 and 2). In the absence of the final texts, including the terms of reference of the two new study groups in the Telecommunication Development Sector, it was agreed to await consideration of the WTDC outcome by the Plenipotentiary Conference, 1994 and return to this subject at the next RAG meeting. In the meantime, the designated rapporteurs could coordinate RAG interests.

Annexes: 2

## **RAG ADVICE TO THE DIRECTOR OF THE RADIOCOMMUNICATION BUREAU IN RELATION TO THE DRAFT STRATEGIC PLAN 1995-99**

The RAG acknowledges the need to analyse the future tasks of the ITU in order to guarantee the close involvement of existing or prospective members in the work of the Union. The Draft Strategic Plan 1995-99 is a good starting point for discussion, however, the document has been developed based on discussions during the meeting of the ITU Council Working Group on Strategic Policies and Plans which occurred in Madrid, 14-15 December 1993. All subsequent meetings of the working group scheduled for Buenos Aires and possibly Cairo were cancelled. Hence, the draft has not benefited from any in-depth review by administrations. The RAG considered in detail Part III A, which relates directly to the Radiocommunication Sector and prepared the proposed alternative text as appended. The RAG also briefly considered the remainder of the Draft Strategic Plan 1995-99 as far as it impacts the Radiocommunication Sector.

The RAG applauds the efforts of those involved in the drafting of the document and particularly the text contained in section 24 which notes that "The Union's strategy in the upcoming Plenipotentiary period should be to approach this issue [of strategic planning] on a practical basis ... the best strategic approach to this issue is not to discuss abstract models and theories, but to look at the concrete, evolving needs of ITU constituents."

In order to assist Council 1994 in its consideration of this Draft Strategic Plan, the RAG advises the Director to bring to the attention of Council 1994 the following concerns:

1. The need to recognize the existing regulatory role of the Radiocommunication Sector and the need to avoid duplication of effort and conflict of interest with that role.
2. The possibility of other demands on resources, increasing pressure for a reduction in the number and duration of Radiocommunication Conferences, Radiocommunication Assemblies and Study Group meetings and bearing in mind the need for efficient operation of the Sector.
3. The different status of the constituent bodies of the Radiocommunication Sector (e.g. WRCs and RAs) and the need to recognize this in considering extended participation in the Sector;
4. The limited opportunity for full discussion of the Draft Strategic Plan, the need for more transparency in the future and the value of involving the Advisory Groups and the Advisory Board.

APPENDIX  
(to ANNEX 1)

**Priorities and strategies**

**1 The Radiocommunication Sector Mission**

Consistent with the provisions of the Constitution and the Convention, Geneva 1992, the mission of the ITU Radiocommunication Sector is, *inter alia*, to ensure rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including those using the geostationary-satellite orbit, and to carry out studies on radiocommunication matters by:

- ensuring that the Radio Regulations continue to respond to the needs of the international community through world and regional radiocommunication conferences;
- coordinating efforts to eliminate harmful interference between radio stations of different countries;
- making Recommendations on technical radiocommunication matters through Radiocommunication Assemblies and study groups;
- providing the products and services necessary to accomplish the Sector's purposes through the Radiocommunication Bureau and the Radio Regulations Board;
- developing an appropriate set of rules of procedures for use in the application of the Radio Regulations and decisions of competent radiocommunication conferences, and approved by the Radio Regulations Board.

**2 The Radiocommunication Environment**

Notably, the radiocommunication environment is characterized by:

- technological convergence of information technology and telecommunications;
- rapid technological development, and the widespread application of digital techniques to most space and terrestrial systems, including mobile communications and new television and sound broadcasting systems;
- increasing demand for the limited radio-frequency spectrum and orbital positions from space and terrestrial systems, different services and service providers, and different countries;
- growing competition in the marketplace between "wired" and "wireless" communications;
- the growing recognition of the economic value of frequencies and orbital positions leading to new approaches to national spectrum management in some countries;
- the growing role of regional organizations and private sector collaboration.

**3 Radiocommunication Sector Strategy**

The strategy of the Radiocommunication Sector is to ensure that the ITU remains the pre-eminent global body for radiocommunications.

The objectives of the Radiocommunication Sector to achieve this strategy are to carry out the functions laid down in the Convention, and specifically in 1995-1999:

- to develop and adopt more precise criteria for frequency sharing and coordination of new and existing systems in both space and terrestrial environments;
- to complete the simplification of the Radio Regulations and consider any consequential impact on the Radiocommunication Sector;
- in close collaboration with the Telecommunication Development Sector, and the Telecommunication Standardization Sector as appropriate, to conduct information meetings and world and regional seminars, accelerate the development of Handbooks, and facilitate the development of automated spectrum management systems;
- to continue to improve the working methods and cost-effectiveness of the Radiocommunication Sector, and to aim at more efficient Radiocommunication Assemblies and radiocommunication conferences;
- to optimize cooperation with the other Sectors and organizations and to minimize duplication of effort;
- to facilitate the development and introduction of new technologies;
- to implement efficient means in order to promote broader participation by Members, particularly developing countries, and others in all the activities of the Radiocommunication Sector.

#### **4 Priorities of the Radiocommunication Sector for 1995-1999**

The priorities of the Radiocommunication Sector for 1995-1999, in addition to those identified by future conferences, are:

- to facilitate the development and introduction of Mobile-Satellite Services (MSS) and Future Public Land Mobile Telecommunication Systems (FPLMTS), including the development of relevant sharing conditions;
- to facilitate the development and introduction of digital television, including High-Definition Television (HDTV), and digital sound broadcasting;
- to provide assistance as requested by a WTDC to facilitate the introduction of modern radio systems to assist the developing countries in raising penetration levels, particularly in rural areas;
- to facilitate timely coordination between new systems and existing systems in both space and terrestrial environments;
- to expand the assistance offered to Member Administrations in registering frequency assignments and in applying the Radio Regulations, with special attention to developing countries;
- to assure that the Radio Regulations are respected in the increasingly competitive and commercial radiocommunications environment;
- in relation to improving the working methods of the Sector, to address options for:
  - early establishment of user friendly document exchange capability;
  - accelerated development of recommendations and improvement in publication mechanisms (reduce unit cost and time to publish, provide wider distribution and electronic availability);
  - increased use of informatics for the notification and processing of frequency assignments;

- a flexible organizational structure in the Radiocommunication Bureau with special attention to the training and development of the Bureau's staff;
- to promote the development of a Global Information Infrastructure (GII);
- to encourage the participation by non-administration entities and organizations in the activities of the Radiocommunication Sector.

## **5 The Radiocommunication Sector Actions**

Taking into account the mission, environment, strategy, objectives and priorities the intended actions of the Radiocommunication Sector include the:

- conduct of information meetings, world and regional seminars and assistance to administrations with special attention to developing countries, e.g. through the development of Handbooks;
- further development of cooperation with other Sectors and organizations and avoidance of duplication;
- increased use of informatics and information technologies including the development of an automated spectrum management system;
- development of a flexible organizational structure, working methods, modern communications means and Bureau's staff training and development;
- recognition that the ITU is an organization providing services to administrations and members of the three Sectors;
- enhanced participation by non-administration entities and organizations.

## ANNEX 2

### **Treatment of contributions to the further development of Recommendations for which no current Question exists**

1. In some cases Recommendations may need to be revised although an appropriate Question no longer exists. In such cases Administrations and members may submit contributions directed to the specific Recommendation.
  2. Where the topic of a contribution for the revision of such a Recommendation falls clearly within the scope of a single Study Group, the appropriate Study Group should be identified by the contributor and the Director shall transmit the contribution to that Study Group for consideration.
  3. Where the subject of the Recommendation extends beyond the scope of a single Study Group ( e.g. for sharing studies), the Director shall undertake consultations with Study Group Chairmen to determine the appropriate means for consideration of the contribution, and shall determine the Study Group responsible. (Note that the principles applicable to the work of Study Group 2 are stated in Annex 3 of Resolution ITU-R 4).
  4. The Chairman of the Study Group thus decided should then make arrangements for the required studies, initially under the provision of Resolution 5 which permits general studies within the Group's mandate. The options include the establishment of a new Task Group or Working Party, which should include any joint interests. Consideration should also be given to the possible need to amend or augment the Questions assigned to the Study Group.
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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

RADIOCOMMUNICATION BUREAU  
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Administrative Circular  
CA/5

DOCKET FILE COPY ORIGINAL

9 March 1994

To Administrations of Members of the ITU and  
other members of the Radiocommunication Sector

**Subject:** Results of the first Conference Preparatory Meeting (CPM)

### Introduction

The World Radiocommunication Conference (Geneva, 1993) recommended to the Council an agenda for the World Radiocommunication Conference 1995 (WRC-95) and a preliminary agenda for World Radiocommunication Conference 1997 (WRC-97).

The 1993 Radiocommunication Assembly by its Resolution ITU-R 2 decided that preparatory studies for a WRC are to be carried out by a Conference Preparatory Meeting (CPM). The CPM for each conference will normally hold two meetings during the interval between WRCs.

### Results of the first meeting

The first Conference Preparatory Meeting was held in Geneva from 15 to 17 February 1994. It organized and coordinated conference preparatory studies for WRC-95 and WRC-97 and proposed a structure for the report to WRC-95, based on the agenda for these two WRCs.

Ninety-nine participants from 35 Administrations, 12 Recognized Operating Agencies and 5 International Organizations attended the CPM. The meeting considered 21 contributions and prepared and approved the following documents:

- Structure of the consolidated report of the ITU-R Conference Preparatory Meeting (CPM-95) to the World Radiocommunication Conference, 1995 (Document CPM94/22 (Rev.1)) (see Annex 1)
- List of Radiocommunication Study Groups (Working Parties/Task Groups) involved in preparation for the 1995 World Radiocommunication Conference (related to WRC-95 Agenda items) (Document CPM94/21 (Rev.1)) (see Annex 2)
- List of Radiocommunication Study Groups (Working Parties/Task Groups) involved in preparation for the 1997 World Radiocommunication Conference (related to WRC-97 Preliminary Agenda items) (Document CPM94/23 (Rev.1)) (see Annex 3)
- Study of regulatory/procedural matters in preparation for WRC-95 and 97 (Document CPM94/24 (Rev.1)) (see Annex 4)

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